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JUDY WIGMORE
(SENDER'S PRINTED NAME)

Judy Wigmore
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RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 1755

PATENT APPLICATION
Do. No. 1941-70

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Paul J. BRUINSMA; Suresh BASKARAN; and Jagannadha R. BONTHA and Jun LIU

Serial No. 09/481,988 Examiner: P. Marcantoni

Filed: January 11, 2000 Group Art Unit: 1755

Original Patent No. 5,922,299 Original Patent Issue Date: July 13, 1999

For: MESOPOROUS-SILICA FILMS, FIBERS, AND POWDERS BY EVAPORATION

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER

We enclose herewith another copy of the Information Disclosure Statement, originally submitted by applicant on January 11, 2000 along with copies of each reference, as requested by Examiner Paul Marcantoni because he stated in the Final Office Action that it is missing from the Patent Office file.

☒ Any deficiency or overpayment should be charged or credited to deposit account number 13-1703.

Respectfully submitted,

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RE ISSUE PATENT APPLICATION
Attorney's Do. No. 1941-70

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Paul J. BRUINSMA, Suresh BASKARAN, Jagannadha R. BONTHA, Jun LIU

Serial No.: Not Yet Assigned

Group Art Unit: Not Yet Assigned

Filed: Herewith

Examiner: Not Yet Assigned

For: MESOPOROUS SILICA FILMS, FIBERS AND POWDERS BY EVAPORATION

PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Applicant submits herewith PTO Form 1449 and copies of patents and publications of which he is aware which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR Section 1.56. For the Examiner's convenience, applicant has separately catalogued and tabbed patents and publications of record in U.S. Patent No. 5,858,457 to Brinker, et al., with which patent an interference is requested, based upon applicant's accompanying reissue patent application (U.S. Patent No. 5,922,299 to Bruinsma, et al.) The remaining references, separately catalogued and tabbed, represent recently discovered patents and publications that may be material to examination of the accompanying reissue patent application.

It is understood that the listed references will be considered in the examination of the application and that no separate copies of the same prior art are required to be provided. This is because they were previously cited or transmitted in the prior U.S. Patent Application Ser. No. 08/937,407 on which the present reissue application is based. 37 CFR Section 1.98(d).

REMARKS

New claims 28-31 restore claimed subject matter from the original application corresponding with originally filed claims 25-28, which were withdrawn, with traverse, as non-elected pursuant to a restriction requirement. Claims 30 and 31 differ from original withdrawn claims 27 and 28 in that they are formulated as product-by-process claims, the

forming process including dry spinning, fiber drawing or evaporation (claim 30) or including spin coating, dip coating or evaporation (claim 31) or combinations thereof. New claims 32-39 are copied (verbatim but for formal corrections, e.g. of spelling or diction errors, and omissions set forth below) from U.S. Patent No. 5,858,457 to Brinker, et al. claims 1-6, 9 and 14. This is for the purpose of provoking an interference between the Bruinsma, et al. reissue application and the Brinker, et al. patent. Specifically, new claim 34 omits Brinker's reference to zirconium and titanium, claim 37 omits Brinker's reference to anionic and nonionic and claim 39 omits Brinker's reference to dip coating, these three dependent claims being dominated by verbatim copied claim 32.

New claims 40, 41 and 42 are all drawn to a method of making a mesoporous film on a substrate. New claims 43-55 depend from new claim 42 and add limitations drawn from Bruinsma patent claims 1, 25 and elsewhere regarding low refractive indices, their characteristically low dielectric constants and low-k dielectric films on silicon substrates (claims 52-55). New claims 56 and 57 correspond to Bruinsma patent claims 1 and 25, respectively, but omit the unneeded limitation regarding the type of surfactant used. New claim 58 is similar to claim 32 but omits the unneeded limitation to the XRD peaks. Finally, new claims 59-62 depending therefrom add limitations similar to new claims 44-48.

No new matter is added, all new claims being supported by the originally filed specification, including the drawings and the originally filed claims.

New claims 32-39 copied from the Brinker, et al. patent are supported by reissue applicant's original disclosure as follows:

Claim 32 finds support at column 2, lines 4-23; column 8, line 43-column 9, line 47; column 9, line 56-column 10, line 2; column 10, lines 36-58; and in Figs. 1-5, 7-10, 13, 16, 18-21.

Claim 33 finds support at column 2, lines 13-23.

Claim 34 finds support at column 7, lines 23-40; column 8, lines 49-54; column 10, lines 38-39; and column 13, line 27-column 14, line 17. Support would also be found in the prior art by which those of skill in the art would have known to substitute other oxides for the disclosed silicon and aluminum oxides.

Claims 35-36 find support at column 18, lines 50-55.

Claim 37 finds support at column 7, lines 41-52 in which the expressly described cationic surfactant is simply "preferred", i.e. non-exclusive.

Claim 38 finds support at column 18, lines 59-63.

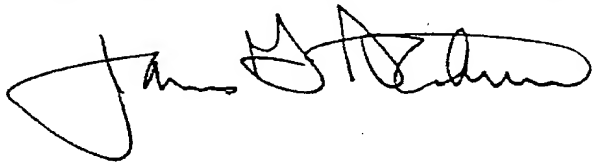
Claim 39 finds support at column 4, lines 35-48; column 6, line 63-column 7, line 1; column 8, line 55-column 9, line 11; column 10, lines 41-58; column 13, lines 29-34; column 18, lines 56-63.

Accordingly, it is respectfully requested that an interference be declared with the Brinker, et al. patent to which applicant for reissue is senior by virtue of applicant's earlier effective filing date. Reissue applicant points out that Brinker, et al.'s U.S. Patent Application Ser. No. 937,407 was filed September 25, 1997. Reissue applicant's U.S. Patent Application Ser. No. 08/921,754 was filed more than one month earlier on August 26, 1997 and claims priority from (abandoned) U.S. Patent Application Ser. No. 08/753,573 filed nearly a year before on November 26, 1996.

The Examiner is requested to call the undersigned if any questions arise concerning the above-mentioned application.

Respectfully submitted,

MARGER, JOHNSON & McCOLLOM P.C.



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INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

OIPE DEC 31 2003 PATENT & TRADEMARK OFFICE JC97

ATTY DOCKET NO.	SERIAL NO.
1941-7.	
APPLICANT(S) Paul J. BRUINSMA et al.	
FILING DATE Herewith	GROUP

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	1	5,858,457	01/12/99	Brinker et al.			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

		1	C.T. Kresge, M.E. Leonowocz, W.J. Roth, J.C. Vartuli & J.S. Beck, Ordered Mesoporous Molecular Sieves Synthesized a Liquid-Crystal Template Mechanism, Nature, vol. 359, Oct. 22, 1992
		2	Jeffrey S. Beck and James C. Vartuli, Recent Advances in the Synthesis, Characterization and Applications of Mesopor Molecular Sieves, Curr, Opinion in Solid State and Material Science, 1996, 1: 76-87 (No month avail.).

EXAMINER	DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Includ copy of this form with next communication t applicant.

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
1941-7	
Applicant(s) Paul J. BRUINSMA et al	
Filing Date Herewith	**Group Art Unit**

*EXAMINER INITIAL		OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
	3	J.S. Beck, J.C. Vartuli, W.J. Roth, M.E> Leon wicz, C.T> Kresge, K.D. Schmitt, C.T-W Chu, D.H. Olson, E.W. Sheppa S.B. McCullen, J.B. Higgins and J.L. Schlenker, A New Family of Mesop rous Molecular Sieves Prepared with Liquid Crystal Templates, J. Am. Chem. Soc., 1992, 114:10835 (No month avail.).
	4	Qisheng Huo, David I. Margolese, Ulike Ciesla, Dirk G. Demouth, Pingyun Feng, Thurman E. Gier, Peter Sieger, Ali Firouzi, Bradley F. Chmelka, Ferdi Schuth and Galen D. Stucky, Organization of Organic Molecules with Inorganix Molecular Species into Nanocomposite Biphase Arrays, Chem. Mater. 1994, 6: 1176-1191 (No month avail.).
	5	A. Firouzi, D. Kumar, L.M. Bull, T. Besier, P. Sieger, Q. Iluo, S.A. Walker, J.A. Zasadzinski, C. Glinka, J. Nicol, D. Margolese, G.D. Stucky, B.F. Chmelka, Cooperative Organization of Inorganic-Surfactant and Biomimetic Assemblies, Science vol. 267, Feb. 24, 1995, pp. 1138-1143.
	6	Peter T. Taney and Thomas J. Pinnavaia, A Neutral Templating Route to Mesoporous Molecular Sieves, Science, vol. 26 Feb. 10, 1995, pp. 865-867.
	7	Stephen A. Bagshaw, Eric Prouzet and Thomas J. Pinnavaia, Templating of Mesoporous Molecular Sieves by Nonionic Poyletheylene Oxide Surfactants, Science vo. 269, Sep. 1, 1995, pp. 1243-1244.
	8	Peter T. Taney and Thomas J. Pinnavaia, Mesoporous Silica Molecular Sieves Prepared by Ionic and Neutral Surfactan Templating: A Comparison of Physical Properties, Chem. Mater. 1996 vo. 8, 2068-2079 (No month avail.).
	9	David M. Antonelli and JAckie Y. Ying, Synthesis of a Stable Hexagonally Packed Mesoporous Niobium Oxide Molecula Sieve Through a Novel Ligand-Assisted Templating Mechanism, Angew, Chem. Int. Ed. Engl., 1996, vol. 35, No. 4, pp. 426-430 (No month avail.).
	10	David M. Antonelli and Jackie Y. Ying, Synthesis and Characterization of Hexagonally Packed Mesoporous Tantalum Oxide Molecular Sieves, Chem. Mater. 199, vol. 8, pp. 874-881 (No date avail.).
	11	Ilrike Siesla, Stefhan Schacht, Glen D. Stucky, Klaus K. Unger and Ferdi Schuth, Formation of a Porous Zirconium Ox Phosphate with a High Surface Area by a Surfactant-Assisted Synthesis, Angew, Chem. Int. Ed. Engl. 1996, 35, No. 5, p 541-543 (No month avail.).
	12	Sandra L. Burkett, Stephen D. Sims and Stephen Mann, Synthesis of Hybrid Inorganic-Organic Mesoporous Silica by Co-Condensations of Siloxane and Oranosiloxane Precursors, Chem. Commun., 1996, pp. 1367-1368 (No month avail.).
	13	K.R. Kloetstra, J.C. Jansen and J. Van Bekkum, Composite Molecular Sieve Comprising MCM-41 with Intraporous ZS Structures, Symposium on Advances in FCC Conversion Catalysts presented before the Division of Petroleum Chemistr Inc. 211th National Meeting, American Chemical Society, New Orleans, LA, Mar. 24-29, 1996.
	14	Hong Yang, Neil Cooms, Igor Sokolov and Geoffrey A. Ozin, Free-standing and Oriented Mesoporous Silica Films Grov at the Air-Water Interface, Nature, vol. 381, Jun. 13, 1996, pp. 589-592. Same ad 19

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1941-7	
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FILING DATE Herewith	GROUP

U.S. PATENT DOCUMENTS

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		4,913,966	04/03/90	Garvey			
		5,057,296	10/15/91	Beck			X
		5,098,684	03/24/92	Kresge			X
		5,102,643	04/07/92	Kresge			X
		5,104,515	04/15/92	Chu			X
		5,108,725	04/28/92	Beck			X
		5,112,589	05/12/92	Johnson			X
		5,145,816	09/08/92	Beck			X
		5,156,829	10/29/92	McCullen			X
		5,198,203	03/30/93	Kresge			X
		5,211,934	05/18/93	Kresge			X

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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	F1	WO 91/11390		PCT			X	
	F2	WO 96/39357		PCT			X	

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

		R15	Chemical Abstracts, vol. 52: 798e
		R16	Organization of Organix Molecules with Inorganic Molecular Species in Nanocomnposite Biphase Arrays, Huo, et al, American Chemical Society, 1994, 6, pp. 1176-1191.

Sheet 4

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		5,215,737	06/01/93	Chu			X
		5,238,676	08/24/93	Roth			X
		5,250,282	10/05/93	Kresge			X
		5,256,277	10/26/93	DelRossi			X
		5,264,203	11/23/93	Beck			X
		5,300,277	04/15/94	Kresge			X
		5,321,102	06/14/94	Loy			
		5,470,802	11/28/95	Gnade			X
		5,472,913	12/05/95	Havemann			X
		5,494,858	02/27/96	Gnade			X
		5,504,042	04/02/96	Cho			X

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		R17 X	Formation of Novel Oriented Transparent Films of Layered Silica-Surfactant Nanocomposites, M. Ogawa, American Checmical Socient, 1994, 116, pp. 7941-7942.
		R18 X	Synthesis of Oriented Films of Mesoporous Silica on Mica, Tang et al, Nature, vol. 379, 1996, p. 703.

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APPLICANT(S)	
Paul J. BRUINSMA et al.	
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*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		5,523,615	06/04/96	Cho	✓		
		5,561,318	10/01/96	Gnade	X		
		5,565,142	10/15/96	Deshpande	X		
		5,622,684	04/22/97	Pinnavaia	X		
		5,625,108	04/29/97	Perego			
		5,647,962	07/15/97	Jansen			
		5,661,344	08/26/97	Havemann	X		
		5,723,368	03/03/98	Cho	X		
		5,736,425	04/07/98	Smith	X		
		5,753,305	05/19/98	Smith	X		
		5,789,819	08/04/98	Gnade	X		

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		X R19	Free-Standing and Oriented Mesoporous Silica Films Grown in the Air-Water Interface, Yanh et al., Nature, 1996, vol. 381, p. 589.
		X R20	The Physics and Chemistry of Sol-Gel Processing, SOL-GEL Science, Brinker et al, p. 109.

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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		5,795,556	08/18/98	Jansen			
		5,795,559	08/18/98	Pinnavaia	X		
		5,800,799	09/01/98	Pinnavaia	X		
		5,804,508	09/08/98	Gnade	X		
		5,807,607	09/15/98	Smith	X		
		5,840,271	11/24/98	Carrazza	X		
		5,847,443	12/08/98	Cho	X		
		5,922,299	07/13/99	Bruinsma	X		
		5,364,797	11/15/94	Olson			

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OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

		R21	A simple sol-gel route for the preparation of silica-surfactant mesostructured material, M. Ogawa, Chem, Commun. 19[illegible] pp. 1149-1150.
		R22	Continuous Mesoporous Silica Films with Highly Ordered Large Pore Structures, Zhao et al, Adv. Matter, 1998, vol. 16 pp. 1380-1385.

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Applicant(s)	
Paul J. BRUINSMA et al.	
Filing Date	**Group Art Unit**
Herewith	

*EXAMINER INITIAL	OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*
R23	Micelle Formation, Nonionic Surfactants, Schick, p. 585.

EXAMINER	DATE CONSIDERED

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